

LOS ANGELES REGIONAL WATER QUALITY CONTROL BOARD

Initial Study - Part 2

ENVIRONMENTAL CHECKLIST FORM

Project title: Technology Demonstration to Evaluate In Situ Bioremediation of Perchlorate in Shallow Groundwater, Area 11, Former Whittaker-Bermite Facility, Santa Clarita, California

Lead agency name and address: California Regional Water Quality Control Board
Los Angeles Region
320 West 4th Street, Suite 200
Los Angeles, California 90013

Contact person and phone number: Peter Raftery
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Project location: 22116 West Soledad Canyon Road
Santa Clarita, California 90220

Project sponsor's name and address: John Cullinane, Ph.D., P.E.
U.S. Army Engineer Research & Development Center
CEERD-EM-J -- 3909 Halls Ferry Road
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General plan designation: Technology Demonstration to Evaluate In Situ Bioremediation of Perchlorate in Shallow Groundwater, Area 11, Former Whittaker-Bermite Facility, Santa Clarita, California

Zoning: Commercial/Industrial

Description of project: The Discharger proposes to conduct a technology demonstration to evaluate the remediation of perchlorate in shallow groundwater by enhanced in-situ bioremediation in selected source areas. In-situ bioremediation at this site will involve the addition of citric acid and diammonium phosphate to the shallow groundwater. The addition of citric acid and diammonium phosphate has been shown to enhance biodegradation of perchlorate and nitrate in soil samples from this site, in laboratory tests. The Discharger has submitted a report of waste discharge for the proposed technology demonstration and the use of a sodium bromide tracer to evaluate groundwater flow, citric acid and diammonium phosphate to enhance bioremediation, and chlorine dioxide to limit well biofouling. In accordance with the California Environmental Quality Act (CEQA), this Regional Board has prepared an Initial Study for the technology demonstration project and the Regional Board has determined that the proposed injection will not have a

Surrounding land uses and setting (briefly describe the project's surroundings):

The Regional Board has also prepared Tentative Waste Discharge Requirements to regulate the use of the sodium bromide, citric acid, and chlorine dioxide to monitor groundwater quality and groundwater flow conditions during remediation.

Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement):

The surrounding land is currently vacant. Development plans call for the construction of approximately 2900 residential units, consisting of detached and attached units. Also, there will be retail, office, and commercial components to the development project. No units are designed, priced, or constructed at this time. The Technology Demonstration is not anticipated to have any effect on the surrounding land.

County of Los Angeles for well permits.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

- | | | |
|--|---|---|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Agricultural Resources | <input type="checkbox"/> Air Quality |
| <input type="checkbox"/> Biological Resources | <input type="checkbox"/> Cultural Resources | <input type="checkbox"/> Geology/Soils |
| <input type="checkbox"/> Hazards & Hazardous Materials | <input checked="" type="checkbox"/> Hydrology/Water Quality | <input type="checkbox"/> Land Use/Planning |
| <input type="checkbox"/> Mineral Resources | <input type="checkbox"/> Noise | <input type="checkbox"/> Population/Housing |
| <input type="checkbox"/> Public Services | <input type="checkbox"/> Recreation | <input type="checkbox"/> Transportation/Traffic |
| <input type="checkbox"/> Utilities/Service Systems | <input type="checkbox"/> Mandatory Findings of Significance | |

DETERMINATION

On the basis of this initial evaluation:

- ☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- ☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- ☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- ☐ I find that although the proposed project could have a significant effect on the environment, because all the potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

David A. Bacharowski AGO
Signature
for *David A. Bacharowski*
JONATHAN BISHOP, Executive Officer
Printed Name

8/17/06
Date
Los Angeles Regional Water Quality Control Board

EVALUATION OF ENVIRONMENTAL IMPACTS

Potential environmental impacts associated with the proposed project are provided below in a checklist format developed pursuant to the California Environmental Quality Act (CEQA) Guidelines. The checklist has been used to assess the significance or insignificance of each potential impact. Brief explanations of each conclusion are provided after the checklists. Mitigation measures, as required, are discussed below each checklist.

Impact classifications used in the checklist are defined as follows:

"Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an Environmental Impact Report (EIR) is required.

"Less Than Significant with Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level.

"Less Than Significant Impact" applies to an effect that would not be significantly adverse.

"No Impact" applies where the effect occurs without impact.

I. AESTHETICS

<i>Would the project:</i>	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial effect on a scenic vista?				X
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				X
c) Substantially degrade the existing visual character or quality of the site and its surroundings?				X
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?				X

The proposed project is located at a commercial facility.

Mitigation Measures

The proposed project would not result in any impacts to aesthetic resources, therefore no mitigation is required.

II. AGRICULTURAL RESOURCES

<i>In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:</i>	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				X
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?				X

The proposed project location is not within existing zoning for agricultural purposes.

Mitigation Measures

The proposed project would not result in any impacts to agricultural resources. Therefore, no mitigation is required.

III. AIR QUALITY

<i>Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:</i>	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?				X
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?				X
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?				X
d) Expose sensitive receptors to substantial pollutant concentrations?				X
e) Create objectionable odors affecting a substantial number of people?				X

The proposed project would not result in any impacts to air quality.

Mitigation Measures

The proposed project would not result in any impacts to air quality, therefore no mitigation is required.

IV. BIOLOGICAL RESOURCES

<i>Would the project:</i>	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?				X
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?				X
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?				X
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident migratory wildlife corridors, or impede the use of native wildlife nursery sites?				X
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				X
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				X

The proposed project would not result in any impact to biological resources.

Mitigation Measures

The proposed project would not result in any impact to biological resources, therefore no mitigation is required.

V. CULTURAL RESOURCES

<i>Would the project:</i>	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a				X

historical resource as defined in §15064.5?				
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?				X
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?				X
d) Disturb any human remains, including those interred outside of formal cemeteries?				X

There are no known historic, archaeological, paleontological or unique geologic resources that exist at the proposed site.

Mitigation Measures

The proposed project would not result in any impacts to cultural resources, therefore no mitigation is required.

VI. GEOLOGY AND SOILS

<i>Would the project:</i>	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: <ul style="list-style-type: none"> (i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42. (ii) Strong seismic ground shaking? (iii) Seismic-related ground failure, including liquefaction? (iv) Landslides? 				X
b) Result in substantial soil erosion or the loss of topsoil?				X
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?				X
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks of life or property?				X
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of waste water?				X

The proposed project would not result in any geologic or soil impacts.

Mitigation Measures

The proposed project would not result in any geologic or soil impacts, therefore no mitigation is required.

VII. HAZARDS AND HAZARDOUS MATERIALS

<i>Would the project:</i>	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?				X
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?				X
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				X
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?				X
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?				X
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?				X
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				X
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?				X

The proposed project would not result in any hazards or hazardous materials impacts associated with the public.

Mitigation Measures

The proposed project would not result in any hazards or hazardous materials impacts associated with the public, therefore no mitigation is required.

VIII. HYDROLOGY AND WATER QUALITY

<i>Would the project:</i>	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?		X		
b) Substantially degrade groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?				X
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?				X
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or surface runoff in a manner which would result in flooding on- or offsite?				X
e) Create or contribute runoff which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?				X
f) Otherwise substantially degrade water quality?				X
g) Place housing within a 100-year floodplain, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				X
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?				X
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?				X
j) Inundation by seiche, tsunami, or mudflow?				X

The amendment solution is expected to remediate the Technology Demonstration area impacted with perchlorate and improve groundwater quality within and downgradient of the treatment area. Carbon source amendments (citric acid) will enhance biodegradation of perchlorate, by creating anaerobic

conditions to ensure growth of indigenous microorganisms capable of breaking down perchlorate to harmless components. The proposed amendments are citric acid and diammonium phosphate

Mitigation Measures

The proposed project will be conducted pursuant to:

1. A Remedial Action Plan approved by the Executive Officer:

"Technology Demonstration Plan-Revised In Situ Bioremediation of Perchlorate in Area 11 Alluvial Groundwater " dated February 9, 2006, prepared by Shaw Environmental. Approved on June 30, 2006.

2. Site-Specific Waste Discharge Requirements Order No. R4-2006-~~XXXX~~ for the addition of sodium bromide, citric acid, and diammonium phosphate, and Monitoring and Reporting Program No. CI ~~XXXX~~ to be considered for adoption on September 14, 2006.

A groundwater sampling and analysis program will be conducted prior to, during, and post addition to closely monitor groundwater effects. Groundwater monitoring will be conducted from 18 existing or proposed groundwater monitoring wells and any additional wells deemed necessary to monitor performance within the respective treatment areas. Analysis will include (1) field parameters (e.g., temperature, pH, conductivity, DO, and ORP), (2) perchlorate, (3) anions (chloride, sulfate, nitrate, and nitrite), (5) and dissolved metals including iron, manganese, and arsenic.

Progressive changes in local groundwater quality are expected to occur over a relatively short period of time, leading to an overall groundwater quality improvement.

The contingency plan, should indications of offsite migration occur, is the operation if the extraction wells without injection. The extraction wells are designed to contain the flow during injection and should be more than sufficient to capture the flow without injection.

IX. LAND USE AND PLANNING

<i>Would the project:</i>	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Physically divide an established community?				X
b) Conflict with an applicable land use plan, policy or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?				X
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?				X

The proposed project would not result in any impacts to land use and planning.

Mitigation Measures

The proposed project would not result in any impacts to land use and planning, therefore no mitigation is required.

X. MINERAL RESOURCES

<i>Would the project:</i>	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				X
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				X

The project site has no known mineral resources.

Mitigation Measures

The proposed project would not result in any impacts to mineral resources, therefore no mitigation is required.

XI. NOISE

<i>Would the project result in:</i>	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?				X
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?				X
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?				X
d) A substantially temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?				X
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				X
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?				X

Noise levels will be similar to those of the existing operation. This project is not located in an area that has noise levels in excess of standards from air operations.

Mitigation Measures

The proposed project would not result in any significant noise impacts, therefore no mitigation is required.

XII. POPULATION AND HOUSING

<i>Would the project:</i>	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?				X
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				X
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				X

Population growth will not be affected and displacement of housing or people will not occur.

Mitigation Measures

The proposed project would not result in any impacts to population or housing, therefore no mitigation is required.

XIII. PUBLIC SERVICES

<i>Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered government facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:</i>	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Fire protection?				X
Police protection?				X
Schools?				X
Parks?				X
Other public facilities?				X

The proposed project would not result in any impacts to public services.

Mitigation Measures

The proposed project would not result in any impacts to public services, therefore no mitigation is required.

XIV. RECREATION

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood or regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				X
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?				X

The proposed project will not result in any recreation impacts.

Mitigation Measures

The proposed project will not result in any recreation impacts, therefore no mitigation is required.

XV. TRANSPORTATION AND TRAFFIC

<i>Would the project:</i>	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Cause an increase in the traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?				X
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?				X
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?				X
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				X
e) Result in inadequate emergency access?				X
f) Result in inadequate parking capacity?				X
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?				X

The proposed facility is not expected to create a significant load to the existing surface street.

Mitigation Measures

The proposed project would not result in any significant transportation or traffic impacts, therefore no mitigation is required.

XVI. UTILITIES AND SERVICE SYSTEMS

<i>Would the project:</i>	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?				X
b) Require or result in construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				X
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				X
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?				X
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?				X
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?				X
g) Comply with federal, state, and local statutes and regulations related to solid waste?				X

The proposed project would not result in any impacts related to utilities or service systems.

Mitigation Measures

The proposed project would not result in any impacts related to utilities or service systems, therefore no mitigation is required.

XVII. MANDATORY FINDINGS OF SIGNIFICANCE

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
MANDATORY FINDINGS OF SIGNIFICANCE				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?				X
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of the past projects, the effects of other current projects, and the effects of probable future projects)				X
c) Does the project have environmental effects which will cause substantially adverse effects on human beings, either directly or indirectly?				X

As discussed throughout this document and with the implementation of the RWQCB-approved source area remediation plans, a General Waste Discharge Requirements, and the Site-Specific Waste Discharge Requirements, the proposed project would not result in any significant impacts to the quality of the environment, nor would it substantially affect biological resources and associated habitats or eliminate important examples of California history or prehistory.

The proposed project would not result in significant cumulative impacts.

As indicated in this document, the proposed project is expected to result in positive benefits of improving groundwater quality.